

REMARKS

By the foregoing amendment, the claims have been amended to provide that the linking group contains N and also contains S or O. It is respectfully submitted that the prior rejections should not be repeated in light of this and the other amendments.

The cited GB 1424517 discloses a dispersing agent of the formula D-(Z-R)_n in which each of the moieties can be a large variety of entities and n can be from 1 to 8. The nature of Z is not critical (page 1, lines 32-33) and can be as simple as a methylene group. Likewise, R can be derived from any optionally substituted addition polymer, including those listed in GB 1,101,261 and 1,096,912. As noted by the Examiner, the R group in GB '517 can contain over 1500 carbon atoms. The GB 1,108,261 patent discloses a huge number of source possibilities for R on page 2 thereof, including polyester chains; polymers of alkylene oxides; high molecular weight epoxy resins; polyamide resins; polymerized drying oil; phenol-formaldehyde, urea-formaldehyde and melamine-formaldehyde resins; polyurethanes; esters of acrylic, methacrylic and ethacrylic acids; vinyl esters; vinyl alkyl esters; polymers of unsaturated hydrocarbons; styrene polymers; alkylene oxide polymers; polymers of vinyl halides and vinyl esters, (meth)acrylic polymers and amides thereof; polyethylene and polypropylene glycol polymers; hydroxylated polymers; and polymers of glycol (meth)acrylates.

In order to arrive at the instant claims from these British patents, one must first make a selection from the R possibilities and chose a hydrocarbon as opposed, for instance, an epoxide. Then one must also make a further selection such that the R group contains 50 to 200 carbon atoms or 50 to 150 rather than 1-49 or more than 200. In addition, one must also make a selection of the Z group and pick one containing N and also S or O rather

than, for example, -CH₂- . Thereafter, n must be selected to be within 1 to 4 (or 1-2) rather than 5 to 8. While it is theoretically possible to make all of these choices simultaneously, that would be serendipitous in that the number of possibilities for each, consider alone, is virtually unlimited. Without using hindsight, which is not permitted, the "likelihood of producing a composition such as her claimed...would be about the same as the likelihood of discovering the combination of a safe from a mere inspection of the dials thereof." *In re Luvisi*, 144 USPQ 646 (CCPA 1965)(quoting from *Ex parte Garvey*, 41 USPQ 583, 584 (Bd. App.) with emphasis by the Board). The British patents constitutes a shotgun disclosure with respect to the claimed invention. The number of combinations and permutations in these references runs into the multi-millions, if not billions. There is nothing which points one skill in the art toward making the correct selections. To do so requires using the instant claims as a template and that, of course, is improper. Further, there is no teaching or suggestion of use in inks.

The Johnson patent relates to modified pigments in which a pigment has an attached group of the formula -X-(nonionic group)_pR in which R represents hydrogen, an alkyl group or an aromatic group and p is an integer from 1 to 500, or -X-[polymer]R in which the polymer contains about 1 to 500 repeating units. In this formula, X represents hydrogen, an aromatic group or an alkyl group, the latter two entities optionally being substituted by an amide or ether group. No linking group containing N and also either S or O has been found in this reference. Further, where R is hydrogen and also where R can represent a polymer such as polyvinylchloride, polycaprolactam, polyester, polyether, polyamide, polymers containing sulfur, etc., none of which are hydrocarbons, the modified pigment of Johnson would necessarily be outside the scope of the rejected claims. The Examiner has acknowledged that where R is a hydrocarbon, it can contain as many as

2,000 carbon atoms. It is not possible to make selections which would result in a material falling within the scope of the claims here.

The claimed dispersant has surprising and unexpected properties. It lessens the relative interfacial tension drop (RIFTD) when employed in a relatively small amount. It can also decrease the viscosity of a pigment dispersion. This is demonstrated in the application on pages 10-13. Table 1 shows that with respect to a Yellow 12 pigment, the invention had about the same viscosity as the comparative examples but the RIFTD ranged from 0.41 to 1.18 as opposed to the significantly higher 1.93. With respect to a Blue 15:3 pigment, the RIFTD was also significantly lower (0.18 vs. 0.73) and here the viscosity was greatly reduced (104 vs. 2816). There is nothing in the references which forecasts the improved relative interfacial tension drop characteristic. This result is not predictable and is surprising, unexpected and unobvious.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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